183. A method for producing an extended wear contact lens, said contact lens comprising a core polymeric material which has a high oxygen permeability and a high ion- water permeability, which method comprises the steps of:

a) preparing a lens formulation comprising an oxyperm polymerizable material selected from the group consisting of fluorine-containing macromers and flourine-containing monomers, and an ionoperm polymerizable material selected from the group consisting of acrylates, methacrylates, polyalkylene glycols and N-vinyl pyrrolidones, wherein said oxyperm polymerizable material comprises between about 30% to about 70%, based on the total weight, of said lens formulation;

b) placing said lens formulation in a lens mold;

c) polymerizing- said lens formulation in said mold to form a lens core material having inner and outer surfaces such that said oxyperm polymerizable material and said ionoperm polymerizable material of said lens formulation form separate oxyperm and ionoperm phases; said lens core material having an oxygen permeability equal to or greater than 77 barrers;

d) removing said lens core material from said lens mold;

e) subjecting said lens core material to a treatment to modify said surfaces of said lens core material, wherein the surface treatment makes said surfaces more biocompatible with the ocular tissue and ocular fluids than said core material alone; and

f) hydrating the treated lens core material to produce a hydrated extended wear contact lens,

wherein the modified surfaces of said lens in conjunction with the high oxygen and ion permeabilities of said core polymeric material allows said hydrated lens to be worn as extended wear lens that is worn for a continuous period of at least 24 hours with corneal swelling of less than about 8%.

184. The method of claim 183 wherein the surface modification treatment is selected from the group consisting of coating processes, grafting processes, plasma treating processes, electrical charge treating processes and irradiation processes.

185. The method of claim 183 wherein the surface modification treatment is a plasma treating process.

186. The method of claim 185 wherein said oxyperm polymerizable material is a fluorine-containing macromer and said ionoperm polymerizable material is N-vinyl pyrrolidone.

187. An extended wear contact lens comprising a core polymeric material and upper and lower surfaces, said core polymeric material comprising a silicone copolymer which provides a high ion permeability and a high oxygen permeability; wherein said silicone copolymer comprises an oxyperm polymerizable material selected from the group consisting of fluorine-containing macromers and fluorine-containing monomers, and an

ionoperm polymerizable material selected from the group consisting of acrylates, methacrylates, polyalkylene glycols and N-vinyl pyrrolidones; said core polymeric material having an oxygen permeability equal to or greater than 77 barrers; wherein said surfaces are hydrophilically modified by a treatment process selected from the group consisting of coating processes, grafting processes, plasma treating processes, electrical charge treating processes and irradiation processes; and wherein said extended wear contact lens can be continuously worn for at least four days on a human eye without substantial corneal swelling.

188. The extended contact lens of claim 187 wherein said core polymeric material comprises a fluorine containing macromer, and N-vinyl pyrrolidone.

189. The extended contact lens of claim 188 wherein said surfaces are modified by a plasma treating process.

190. The extended contact lens of claim 189 wherein said extended lens can be continuously worn for about 7 days with less than about 8% corneal swelling.

191. The extended contact lens of claim 187 wherein said wended lens is worn for about 30 days.

192. A hydrogel contact lens having modified surfaces, said hydrogel contact lens comprising a core polymeric material having an oxygen permeability equal to or greater

than 77 barrers, said hydrogel contact lens being suited to make contact with ocular tissue and ocular fluids and having a high oxygen permeability and a high ion permeability, said core polymeric material having formed from polymerizable materials comprising:

(a) an oxyperm polymerizable material selected from the group consisting of fluorine-containing macromers and fluorine-containing monomers, and

(b) an ionoperm polymerizable material selected from the group consisting of acrylates, methacrylates, polyalkylene glycols and N-vinyl pyrrolidones,

wherein said lens has a high oxygen permeability and allows ion or water permeation in an amount sufficient to enable the lens to move on the eye such that corneal health is not substantially harmed and wearer comfort is acceptable during a period of continuous contact with ocular tissue and ocular fluids, wherein said lens has an oxygen permeability of at least about 77 barrers and an ion permeability characterized either by an Ionoflux Ion Diffusion Coefficient of grater than about 6.4 x 10-6 mm^2/sec or an Ionoton Ion Permeability Coefficient of greater than about 0.4 x 10-6 cm^2/min,

wherein said modified surfaces are hydrophilically modified surfaces that are modified by a treatment process selected from the group consisting of coating processes, grafting processes, plasma treating processes, electrical charge treating processes and irradiation processes,

wherein said hydrogel contact lens is adapted for at least 24 hours of continuous wear on a human eye without substantial corneal swelling.

193. The hydrogel contact lens of claim 192 wherein said core polymeric material comprises a fluorine containing macromer as said oxyperm material and N-vinyl pyrrolidone as said ionoperm material.

194. The hydrogel contact lens of claim 193 wherein said surfaces are modified by a plasma treating process.

195. The hydrogel contact lens of claim 194 wherein said lens can be worn for about 7 days with less than about 8% corneal swelling.

196. The hydrogel contact lens of claim 194 wherein said lens is worn for about 7 days with less than about 4% corneal swelling.

197. The hydrogel contact lens of claim 194 wherein said lens can be continuously worn for about 30 days.

198. The hydrogel contact lens of claim 194 wherein said lens has an oxygen permeability of at least about 81 barrers.

199. A method of using a contact lens as an extended wear lens, said lens having ophthalmically compatible modified surfaces, said lens being suited to extended periods of wear in continuous, intimate contact with ocular tissue and ocular fluids, said lens comprising a polymeric material which has a high oxygen permeability and a high ion or

water permeability, and which has an oxygen permeability equal to or greater than 77 barrers, said polymeric material being formed from polymerizable materials comprising:

(a) an oxyperm polymerizable material selected from the group consisting of fluorine-containing macromers and fluorine-containing monomers, and

(b) an ionoperm polymerizable material selected from the group consisting of acrylates, methacrylates, polyalkylene glycols and N-vinyl pyrrolidones,

wherein said modified surfaces are modified by a treatment process selected from the group consisting of coating processes, grafting processes, plasma treating processes, electrical charge treating processes and irradiation processes;

wherein said lens allows oxygen permeation in an amount sufficient to maintain corneal health and wearer comfort during a period of extended, continuous contact with ocular tissue and ocular fluids;

wherein said lens allows ion or water permeation in an amount sufficient to enable the lens to move on the eye such that corneal health is not substantially harmed and wearer comfort is acceptable during a period of extended, continuous contact with ocular tissue and ocular fluids; and

wherein said ophthalmic lens has an oxygen permeability of at least about 70 barrers and an ion permeability characterized either by (1) an Ionoton Ion Permeability Coefficient of greater than about 0.4 x 10-6 cm^2/sec or (2) an Ionoflux Diffusion Coefficient of greater than about 6.4 x 10-6 mm^2/min, wherein said ion permeability is measured with respect to sodium ions;

said method comprising the steps of:

(a) applying said lens to the ocular environment. and

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(b) allowing said lens to remain in intimate contact with the ocular environment for a period of at least 24 hours.

200. The method of claim 199 wherein said lens has an oxygen permeability of at least about 81 barrers.

201. The method of claim 199 wherein said intimate contact period is at least 4 days.

202. The method of claim 199 wherein said intimate contact period is about 7 days.

203. The method of claim 199 wherein said intimate contact period is about 14 days.

204. The method of claim 199 wherein said intimate contact period is about 30 days.

205. The method of claim 199, wherein said lens produces, after wear of about 24 hours, including normal steep periods, less than about 8% corneal swelling.

206. The method of claim 199, wherein said lens produces, after wear of about 7 days, including normal sleep periods, less than about 6% corneal swelling.

Please address all correspondence to Thomas Hoxie, Novartis Corporation, Patent & Trademark Department, 564 Morris Ave., Summit, NJ 0790-1027. The Commissioner is hereby authorized to charge any other fees which may be required under 37 C.F.R. §§1.16 and 1.17, or credit any overpayment, to Deposit Account No. 19-0134.

Respectfully submitted,

Date: 8/16/00

Richard I Gearhart
Registration No. 36,145
(678) 415-3650

Novartis Corporation
Patent & Trademark Department
564 Morris Ave.
Summit, NJ 07901-1027

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